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## Taiwanese Love Nature, Yet Struggle to Embrace Their Heritage : Let' s Try Local/Indigenous Knowledge and Value

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## **Taiwanese Love Nature, Yet Struggle to Embrace Their Heritage: Let's Try Local/Indigenous Knowledge and Value**

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### **Abstract**

Taiwan (Formosa) is a nation rife with contradictions. The people of Taiwan face the often difficult task of balancing their deep, traditional cultural influences with their roles as citizens in a modern liberal—and advanced technological—society. Thus the question of the Taiwanese identity continues to be an elusive one. Their Chinese heritage looms great in the minds of the Taiwanese, and Daoism historically advises commune with nature.

Yet in today's world, the 'built and virtual' are taking over the ecology of the mind, situating nature at a distance rather than as something in which we are immersed. In the midst of this trend, Taiwanese people are normalizing electronics and media in their lifestyles, which risks distracting them from the imperative to confront how their identities are bound up with nature.

Nevertheless, in Taiwan nature beckons from the mountains, valleys, plains, shores, and neighbouring islands. Indigenous peoples have been inspired by these landscapes and over the past four centuries this understanding of the environment was transmitted and blended as folk beliefs with emigrant populations from China. Today, this orientation of knowledge could be passed on to generations to come or it could be forgotten.

This study has sought to give examples of how Taiwanese have either failed to conserve their heritage or how they have developed the processes by which to select ecological resources and integrate them into their local cultural repertoire. Later in this chapter, I will propose revisiting a continuance of knowledge by using technologies applied to museums of ethnology encouraging the current generation of App users to make sense of their heritage for themselves. Such strategies may enhance local public awareness, education, and heritage conservation.

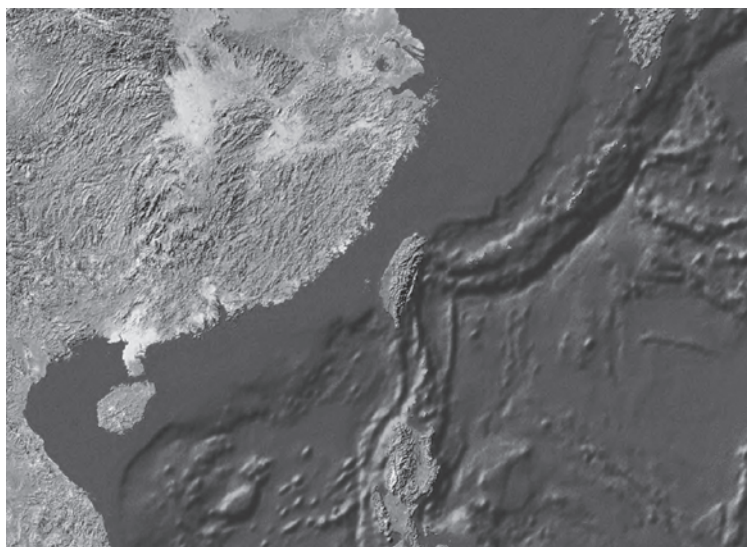
### **I. Introduction**

Taiwan, historically known as Formosa, is layered from its geomorphic uplifting from the seabed of the Western Pacific and East Asia. Earth's tectonic plates—colliding over

millions of years and pressing up the east coast of Taiwan—created the Central Range with several hundred peaks over 3,000 m (highest at 3950 m) sloping down to the western plains. In the north, a collapsed volcano smoulders, active with thermal springs. To the south, Taiwan crosses the Tropic of Cancer, and ancient uplifted limestone and coral reefs at Cape Eluanbi jut into the tropical windswept Bashi Channel. The island is 35,800 sq. km, constituted by a length of about 395 km and width of 140 km at its broadest crossing. Two-thirds of the country is hilly and mountainous with a wide range of altitudinal zonation and varied climates and habitats, which naturally sustain high levels of the island's ancient biodiversity of flora and fauna. Pristine valleys are home to forests of fir, conifers, temperate and subtropical broadleaved trees, giant cypress and redwoods, and approximately 700 species of ferns; meanwhile, fauna includes flying squirrels, black bears, cloud leopards, pangolins (scaly anteaters), boars, and several varieties of monkeys. Over 600 species of birds exist across the island's diverse landscapes providing habitats from mountain cliffs to estuaries and lagoons (see Yang and Huang 2009). Eight national parks make up approximately 20% of the total land area of the country, including the islands of Penghu and Jinmen.

Cultural layers date back to Late Palaeolithic peoples who migrated to Taiwan before it was an island, approximately 30,000 years ago. After the last Ice Age, sea levels rose, flooding the east coast of Asia and making Taiwan an island—ultimately, this phenomenon created a unique habitat of flora, fauna, and people. Colliding tectonic plates continue to uplift Taiwan. Today, the island's east coast remains the only remnant from the last Ice Age of the former east coast of Asia on the continental shelf (Figure 1).

Post-Ice Age global warming continued across Eurasia. Glaciers receded creating an environment for the emergence of Neolithic peoples with new technologies for refining



**Figure 1** Topographical map of East Asia with Western Pacific Ocean floor showing Taiwan uplifted on the continental shelf (source, Google Earth).

stone tools, architecture, pottery, weaving, agriculture, and the construction of river and sea crafts. Approximately 6,500 years ago, Neolithic people began sailing out of river estuaries in coastal East Asia to the island of Taiwan, where they populated the country and mixed with its existing Late Palaeolithic peoples (Chang 1989).

Together, the lifestyle of seafaring and the island's diverse terrain created a habitat for exploration and settlement; in this environment, Neolithic peoples developed separate Formosan language groups and set the stage for the first incubation of Austronesian languages (Blust 1996; Bellwood 2009; Tsuchida 2009). The groups settled in different environmental zones, stretching across coastal plains and terracing mountain slopes. Meanwhile, approximately 4,500 years ago, in the region of Hualien, Nephrite jade was developed as a resource for export to areas that are now the Philippines, Vietnam, and Indonesia. Trading expanded by seafaring further across the region (Figure 2).

By the late Ming and early Qing dynasties (approximately 400 years ago), immigrants from China started inhabiting the western coastal plains of Taiwan. These settlers were primarily men. Integrating with native Taiwanese populations, they brought Chinese Daoist beliefs related to the power of nature, their deities, and their own brand of ancestor worship to the region. These practices mixed with local Taiwan indigenous customs that notably also respected nature in a belief system known as animism. The result was the development of Taiwanese Daoist traditions, which became more popular than official administrative Confucian statecraft. The animistic folk beliefs of the local people proliferated across the island (Kirkland 2004). This integration animism was



**Figure 2** Taiwan seafaring routes from between 4,500 and 3,500 years ago (map displayed at the Austronesia Exhibition of Bentara Budaya, Denpasar, Bali, Indonesia, July 20, 2016).

notably evident among the plains people (*pingpu*) of western Taiwan, as can be observed among the Siraya of the Tainan area until today (Wen 2009; Hammarström et al. 2017).

For our purposes, it is helpful to note that, in 1949, the central government of China relocated in 1949 due to losses Chinese Civil War, bringing peoples from the country's provinces to take up residence in Taiwan; this created an artificial sense of Chinese superiority on the island. Earlier inhabitants living in Taiwan were considered inferior by the refugees that administrated the Republic of China (ROC) government. Local populations were suppressed until the lifting of martial law, which was in place for 38 years (from May 1949 to July 1987). Through popular elections held since the 1990s, the Taiwanese people partially reclaimed their inheritance, although mainland China continued to dominate the local imagination, in part because Taiwanese people were educated to affirm the greatness of Chinese civilisation. Along these lines, local peoples were not taught their own island's past—instead they were taught that their 'past inheritance came from China' (Blundell 2012).

Today, the Taiwanese struggle to reclaim their inheritance: national and local governments continue to ask people to adhere to economic policies, superseding Taiwanese ancestral cultures. Yet situating the past as a precious resource, Taiwanese society is also increasingly emphasizing the need to protect the past and instruct inheriting generations about its meaning and value paying attention to documented sites of prehistory and history to enhance archaeological and ethnological literacy (Lien 1989). The previous cabinet-level Council for Cultural Affairs, now the Ministry of Culture, researched and listed several natural and cultural sites for consideration as possible world heritage sites (Blundell 2003).

Anthropology recognizes the past as a resource to be utilized in the present (Appadurai 1981). And yet, many important documented sites of the past are being threatened by economic development. Affirmation of natural and cultural heritage situates Taiwan as a rich complex system *of, by, and for* humanity. Once heritage has been recognized and established as a matter of record for the world to observe, the obvious next step is to open the doors for the public to take notice and visit sites about which it had previously only read.

Internationalization has been a guiding force for Taiwan to connect with world agencies such as those whose purview is commerce (e.g., World Trade Organization and Asia-Pacific Economic Cooperation) and sports (e.g., International Olympic Committee). Bilateral government relationships have been sustained for years in terms of education and cultural exchange and military security issues. Partnerships are also flourishing with nongovernmental organizations and religious institutions facilitating standards for health care, environmental protection, and human rights.

Information technologies are deeply integrated into the development of Taiwan and play a constitutive role in its globalization process. For our purposes, it is important to note that, since the 1980s, Taiwan has become increasingly concerned with its cultural and environmental role in the international community. Although it has a global view, the ROC government continues to facilitate a sense of local cultural traditions—for example, a national park system was established to ensure sustainable natural heritage. Put broadly,

institutions and government agencies are working to enhance public knowledge about local heritage by increasing awareness and academic exchange on the topic.

In this chapter, I propose that the Taiwanese re-visit their inheritance as an island people. Of course, mainland-Chinese influence is part of the story, yet Taiwan has its own inheritance from Late Palaeolithic and Neolithic peoples to historical traders in the region, complete with Indo-Pacific extensions (Blundell 2016).

In the subsequent sections, the reader will be introduced to definitions of heritage and history as recorded past events, and how it applies to accumulative heritage of the present society. Increasingly over the last two decades, at the national level, Taiwan has embraced international trends of observing heritage. Yet in northern Taiwan, local government has ignored national directives and placed culture at risk, such as the intentional demolition of a valuable heritage site. Other examples in eastern Taiwan and Penghu observe ecological heritage and utilization of natural resources that seem to be working for the local communities there. I share my hope that Taiwanese will practice heritage conservation for sustaining the environment and culture in part by helping with the growing trend of new technologies already being featured in museums while also protecting sites of historical importance.

## II. Heritage and History

Michael Buckland suggests that it is useful to distinguish between the *past*—that is, what happened (with *history* understood as an account of the past)—and *heritage*, namely those parts of the past that affect us in the *present*. To be more precise, history depends on the inscribed documentation of the past; otherwise, it will not be possible to refer directly to events that have transpired. The past is knowable only indirectly through histories—descriptions and narratives of what happened. For every aspect of the past, there can be many narratives or none at all; because many factors constitute a ‘history’, the past is always plural and incomplete.

Buckland draws his concepts from Fentress and Wickham (1992), who wrote about the processes by which narratives come to be (1) selected, (2) adopted, (3) rehearsed, and (4) adapted. The process is accepted as a mythic account as opposed to ‘those that we don’t know or don’t accept’ (Buckland 2004: 39). The legacies that we use are the consequences not only of the past more generally, but, as such, of past decisions about adoption and implementation as well as our current selections.

In 2001, Taiwan launched its World Heritage Day—similar to what has been done in France since 1984. The following year, Taiwanese observed their Cultural Environment Year celebrating world heritage. At that time, twelve potential heritage sites were recommended by the Council for Cultural Affairs of Taiwan to be reviewed by local historians, cultural experts, and government agencies. In March 2003, the council appointed an operations committee to manage the application schedule, as well as to oversee the maintenance and preservation of potential world heritage sites in Taiwan (Chang 2003; Blundell 2003).

Next I will share my observations taken from recent examples of (1) New Taipei



City where the Xindian cemetery dating back to the Qing dynasty with its auspicious *fengshui* tombs in a natural hilly green area was officially removed to create space for economic use, (2) in eastern Taiwan, Matai'an wetlands serve an example of indigenous Amis practicing their ingenuous maintenance of a layered bio-diverse freshwater aquaculture system, and (3) Penghu serving as a good example of resource utilization of ocean tides for fishing and wind generation producing electricity.

The following subsections present three different cases of Taiwanese stewardship over heritage in instances where ecological, economic, and investment interests converge. The case of the Xindian First Public Cemetery in Xindian District, New Taipei City provides an example of ignored heritage and ecological value. The case of the Matai'an wetlands examines the efficient use of indigenous knowledge for ecological resource management. The case of Penghu presents the usage of pre-industrial and industrial technologies to work in tandem with natural resources for economic needs.

### 1. Xindian

Xindian is the southeast gateway from Taipei to the riverine settlement of Wulai, the entry into indigenous Atayal resource lands. During the Qing dynasty, this area became a place where local mountain products could be traded with merchants who maintained warehouses along the Tamsui River to the seaport. Xindian served as an ideal resting place for ancestors because it was a hilly green area with freshwater springs, having good *fengshui* (known for its auspicious geomancy of wind and water elements) providing animistic elements required for Daoist beliefs respecting spirits of the earth (Jordon 1972) and thus connecting people with their essential life-giving power from the environment. This worldview was important for heritage architecture and spatial arrangements.

The practice of *fengshui* has long been used to identify the best resting place for the dead. *Fengshui* yields the best resting place for the dead, *inter alia*, with geomancers seeking exactly the conditions that Xindian offered. It is no surprise, then, that the Qing authorities should have chosen this location for the First Public Cemetery, which was demarcated for auspicious burials. The cemetery was set in a foothill environment, away from the heart of the city: That is, in a place of solitude reserved for nature with ponds, grass, and trees (Photo 1, 2).

To rest with peaceful coexistence had meaning in this eco-zone where for centuries people could visit and commune in a setting of tombs of indigenous, Daoists, Shinto, Buddhists, Christian, and other beliefs. Precious inscribed and adorned gravesites observing *fengshui* were sanctioned and protected by Taiwanese earth gods (*hou tu*, an ancient Gaia like deity, or *tudi gong*, whose observance came of age in the Ming dynasty, Fujian Province, and spread to Taiwan) (Photo 3). All of these elements are necessary in the traditional Chinese belief for the fortunes of the living and perpetuation of the family lineage.

For centuries, local families paid respects to their dead by erecting tombs with corresponding stone carvings, architecture, sculpture, mosaics, inscriptions, symbolic forms, portraits, and floral arrangements. They included aesthetic forms of angelic



**Photo 1, 2** Xindian First Public Cemetery—a balanced ecology of nature for centuries before its destruction. Above, in treetops—a black drongo (*Dicrurus macrocercus harterti*), one of many bird species finding sanctuary in this green space. Below, freshwater spring (2018, James X. Morris).

sculptures, animals, heritage folk stories, tile works, and uniquely precious motifs (Photo 4, 5, and 6).

In March 2018, an independent hydrology survey was conducted at the Xindian cemetery. It was found that the site is a naturally occurring shallow mountain water ecosystem that contained hilly marshlands and ponds. The value of this hydraulic green space for local flora and fauna and its natural utilities situate it as a potential green zone for the city government: that is, as an economic resource in tune with nature.

Taipei County was reorganized in 2010 as New Taipei City, and public lands were re-zoned for other uses including the Xindian First Public Cemetery. In two phases, 2016 and 2018, the city government levelled the cemetery. Despite efforts to lobby the local government and inform them of the heritage value of the precious tombs and the importance of preserving the area's natural ecology, the site was destroyed by heavy machinery (Morris 2018b). The tombs were broken up and used as landfill, changing the lush eco-system into a sterile environment without a sense of aesthetic grace (Photo 7). This levelling of heritage is currently happening to other important cemeteries across





**Photo 3** Earth god (*tudi gong*) displaying a synthesis of both ancient and contemporary iconographic concepts. The two Chinese characters (above the image) read *hou tu*: referring to a deity of land specifically providing a tomb's protection at Xindian First Public Cemetery (2017, Blundell).



**Photo 4** The development of *fengshui* and tomb designs integrated with the natural environment. Here is an elaborate tomb featuring Qing dynasty aesthetics, constructed c. 1824 at Xindian First Public Cemetery (2017, Morris).



**Photo 5** An elegant basalt stone tomb featuring 20th century aesthetics in the Chinese tradition with planted trees (*Juniperus communis*) bordering the back mound (*hou kao*), constructed c. 1989 at Xindian First Public Cemetery (2017, Blundell).



**Photo 6** Family tombs with folk decorative motifs and religious symbolic elements at Xindian First Public Cemetery (2017, Blundell).

Taiwan (Blundell and Morris 2019).

Why would a people steeped in indigenous and Daoist beliefs and thus attuned to the values of nature allow the destruction of their precious land and water? To be sure, in terms of legality, city officials are within their rights as custodians of the people to re-zone public lands. The mandate of the city is to urbanize: that is, to create a commercial and sanitary environment for the ease and comfort of its many citizens. However, there are many ways for a city to live up to the expectations of its people.

For example, Beitou, in the northwest Taipei environs, offers a good example of an



**Photo 7** Behind the metal gate are the remains of the tombs pictured in Photo 6, Xindian First Public Cemetery (2018, Blundell).



**Photo 8** Postcard of Hot Springs Bath House, 1935. Japanese era, Hokuto, Beitou (Woods 2012: 77) (courtesy of SMC Publishing).

alternative way of meeting citizen expectations: local people rescued the oldest hot springs bathhouse and restored it as a community centre and museum in ways that celebrated its historical value and natural thermal waters (Woods 2012) (Photo 8).

Let us now look at other positive examples of heritage conservation and the utilization of nature for public value.





**Photo 9** Layers of water plants above bamboo and twigs in a shallow pond creating an aquatic habitat, Matai'an (2018, Blundell).

## 2. Matai'an Wetlands

In Guangfu Township of Hualien County, in the eastern longitudinal rift valley of Taiwan, the Matai'an community practices aquaculture developed by the indigenous Amis. The coastal Amis people lived successfully by utilizing ocean reefs for centuries. When moving inland along the rivers, they brought their reef aquaculture to artificial ponds, creating layers of resource water cultivation. This process is known as *palakaw* and is often done in a garden outside a household, with a family channelling fresh river water and generating an eco-system.

The process involves cutting bamboo into flat strips and laying it in shallow ponds to form a grid, with larger pieces left open to create habitats for aquatic life. With levels of bamboo and twigs home to water plants, the pond's three-layered structure operates as a natural habitat where crab, shellfish, and snails find lodging and fish and shrimp swim freely (Photo 9).

To harvest, people shake the twig structure to catch shrimp and small fish into prepared nets (Figure 3). Large bamboo tubes on the bottom layer make an ideal home for eel, mud eel, and walking catfish (Figure 4).

Natural fresh water constantly flows into the ponds covering an area of 12 hectares. Notably, wetlands from south to north demonstrate differences in the speed of water flow and depth creating diverse living environments that nourish nearly a hundred species of aquatic life and yield a thriving ecology.

## 3. Penghu

Another good example of utilizing forces of nature is found in the Penghu archipelago between the Taiwan Channel and the Taiwan Strait. In Penghu, fish traps or weirs are



**Figure 3** In the pond habitat, shaking aquatic life from twigs into a net, Matai'an (display at Matai'an, 2018).



**Figure 4** From the lower pond level, harvesting eel from hollow bamboo tubes, Matai'an (display at Matai'an, 2018).

constructed in the tidal zone (Photo 10). These are made of stones or wooden posts, which allow for the incoming tide to flush in seawater through a narrow passage to an outer pond. As the tide increases, seawater surges into the inner pond. High tide brings in fish within the walled ponds and, when the tide ebbs, fish remain in the weir to be caught by fishermen. These fish weirs have been used from the Neolithic age across the





**Photo 10** Fish weir, double heart style, Chimei, Penghu (2013, Blundell).



**Photo 11** Wind generator, Jhongtun Village, Penghu (2013, Blundell).

Pacific, and for the past 700 years fishermen have been constructing stacked-stone fish weirs in the Penghu archipelago. Today, Penghu utilizes about 570 stone weirs for fish harvesting.

Another natural resource in Penghu is the monsoon wind that is channelled through the Taiwan Strait. In October 2001, Penghu erected wind farms at Jhongtun Village. This was the second wind farm in Taiwan designed as a windmill park utilizing a third-generation wind turbine. The mechanism used in this wind turbine is able to alter its speed—as wind speed changes, the blade angles adjust, thereby optimizing the unit's energy-generation function; moreover, the spinning speed can also be adjusted according to the level of demand experienced by the electrical grid, to produce a stable supply of electricity (Photo 11).

In the next section, I ask how people who have a healthy respect for the utility of environmental and cultural heritage could decide to abandon these core values. This brings us back to the question: who are the Taiwanese? In the complexity of their history and ethnic diversity, could there be a unified attitude forming a policy that people can agree upon? What are their options?

A factor that most people agree upon is that the technology in Taiwan in terms of development, manufacturing, and users has created an environment of world citizens. Taiwanese are well connected to each other and the world through their technology, which is among the world's most advanced integrated electronic systems. Yet as a people, their heritage is mixed, and continues to be complex.

Over the past four centuries, Formosan indigenous peoples went from being 100% of the island's population to the present 2%. Immigration from China—initially men from Fujian province and Hakka families from Guangdong province—settled on Taiwan's western plains among the indigenous people (*pingpu*). Immigrant men became farmers and tended to intermarry with indigenous women; Hakka kept within their own family lineage and developed many possible trades, depending upon their location. Indigenous groups that remained out of the reach of the Qing administration maintained their lifestyle into the late 19th century.

Everything changed once the Qing government relinquished Taiwan and its neighbouring islands to the Japanese in 1895—the people were systematically colonized as the island's administrators focused on bringing the indigenous Formosans into the modern world. Since 1945 the ROC government has continued this policy. The people living in Taiwan represent many groups with separate value systems. Yet, there are some common denominators based on sharing island space and striving for better education and advancing livelihood.

### III. Advances in Ethnology Museums and Local Community Research

Taking into consideration the question: who are the Taiwanese? I will explore ways to look into this question through examples of museums and advances in technologies addressing diverse ethnicities sharing 'an island sense of place.'

(1) In Taipei, the Shung Ye Museum of Formosan Aborigines was established in 1994 for maintaining heritage relationships with indigenous groups in Taiwan. Over the years, this institute has developed through the conservation of Formosan indigenous knowledge and by sharing research and collections with other museums, universities, and academic organizations in Taiwan and internationally. Safe C. F. Lin, the museum's founder, expressed his aim by saying 'In loving our native place we must cherish each other's cultures.' To be sure, a well-grounded liberal education can encourage understanding and mutual respect for different peoples and their worldviews. A mandate of the museum is to enhance displays for the public to encourage them to become more aware of how various ethnic practices are attuned with the local environment in ways that create long-term sustainability. This trend is happening in many other countries, such as Japan (Honda 2019).

Ethnological museums help a society learn about its local heritage and become interested in other cultures. Today, we increasingly have the capacity to explore the world from our hand-held electronic devices—we have entered an age where digital tools are more and more prevalent in daily life. In this context, archives and cultural displays become more accessible, thereby empowering museums to effect outreach more effectively. This gives us a view across big data, providing unexpected ways of looking at and configuring information. Accordingly, mapping is one of the most commonly used techniques for reviewing our different senses of being-in-space (see Cosgrove 2004).

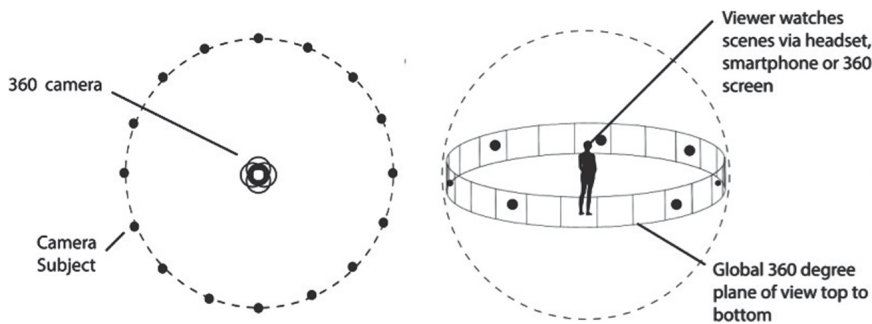
Museums in urban spaces increasingly link people with advanced technologies other cultures and environments as well as their own (whether their own cultures and environments are near or far). At the same time, Taiwanese people are increasingly using electronics and media in their everyday lives. Such electronic spatiotemporal interfaces provide new channels for integrating primary source materials into interactive visualizations. For example, by bringing a mobile device to a site of historical importance or interpretation centre into an open-air environment, and even into a remote natural locale—the mountains, valleys, plains, shores, and neighbouring islands.

(2) In 2016, working with Richard Cornelisse, we developed a concept paper for the 22nd International Conference on Virtual Systems and Multimedia (VSMM) in Kuala Lumpur at Sunway University. We presented on a Taiwan virtual reality project where the viewing participant was at the centre of an immersive nonlinear moving imagery—designed to activate viewer participation and allowing them to engage a diverse Taiwanese *milieu* by transporting the viewer into a subtle, yet nuanced heightened awareness of among people, places, and local traditions. This experience re-contextualizes an individual's understanding of the cultures, diversity, and landscape of Taiwan as both viewer and participant. Within this virtual reality platform, voices, songs, dances, stories, languages, rites, and landscapes emerge in the context of diverse locations in Taiwan through the surroundings of 360-degree compositions. In this way, participants develop an association in landscapes and share their own story.

This immersive interaction gives the viewer the active role of creating meaning, thus engendering a sense of connectivity and empathy with a sense of place. Ultimately, this interaction empowers viewers to apply such meaning and presence to their own lives and opens up questions of their own identity related to being an individual in a shared community of being Taiwanese as a national citizen in a rapidly changing world (Cornelisse and Blundell 2016) (Figure 5).

Scientific and educational interests share a commonality based on a platform of spatial humanities utilization, a subset of the digital humanities. Spatiotemporal interfaces provide new methods of integrating primary source materials and produce interactive visualizations.

(3) At National Chengchi University in Taipei, Taiwan, in 2015, we launched our Asia-Pacific Spatiotemporal Institute (ApSTi). Here, we created an environment for synergies to occur between researchers based on studies and advanced technologies in digital/spatial humanities (see Streiter and Goudin 2014; Blundell and Jan 2016; Blundell, Lin, and Morris 2018). With local communities, we use volunteer geographic information



**Figure 5** People stand around the 360-degree camera in circular compositions thus giving the viewer a privileged perspective within the action of each scene (diagram by Richard Cornelisse, 2016).

(VGI) strategies for recording, taking into account local aesthetic values to make visual heritage documents intelligible to the local viewers of the society they represent as well as the international community.

To facilitate collaborative research and public participation, our vision for ApSTi is to further utilize advanced geospatial and information technologies to create a platform that provides researchers with tools from the digital humanities for data acquisition, data sharing, spatiotemporal analysis, and information visualization. Our spatiotemporal interfaces provide new methods of integrating primary source materials into interactive visualizations. Moreover, by utilizing geographic information systems (GIS), we are able to chart the extent and dynamics of specific traits of cultural information to create layered maps. In particular, I am interested in uncovering meanings and innovations that enrich what scholarly efforts have already achieved in historical mapping across time.

As noted above, utilizing GIS enables us to chart the extent and dynamics of specific traits to create layered maps. The system is based on GIS point locations, routes, and regions linked to enriched attribute information. These are charted in maps and can be analysed with network analysis, creating an innovative infrastructure and creation of customizable interoperable layers of information for local and international scholarly collaboration and exchange.

Our aim is interdisciplinary to produce narratives from historical and ethnographic records recounting ways of life in Taiwan and the region of Monsoon Asia. With our technologies, we have systematically managed an enormous amount of data accumulated from various research fields.

Local and indigenous knowledge has taught us how to be engaged within our environment. This orientation of local knowledge could be passed on to the generations that are to come, or it could be forgotten. Let us interactively steward our inherited knowledge with the current generation of App users by encouraging them to make sense of heritage for themselves by using technologies linked with museums of ethnology (Blundell and Zerneck 2014).

#### IV. Conclusion

The island's human populations have been diverse since prehistory divided into dozens of groups retaining separate Formosan languages, yet incubating a seafaring *lingua franca* for trade across the region. Indigenous peoples traded with Dutch and Spanish colonizers and mixed with emigrate settlers from China, thus becoming increasingly heterogeneous and eclectic in their value systems. Japanese colonial rule (1895–1945) added another layer of culture, opening the island to modern world markets by the 1920s and 1930s. Yet, from the 1940s, massive influxes of populations from every province of China hugely increased cultural diversity with the imposition of non-island authority. From the 1990s, democratization created, for the first time in the island's history, a sense of self-rule by peoples increasingly coming to know themselves as Taiwanese.

In Taiwan, development interests are mostly out of tune with the environment and backed by economic projects, which remain major drivers of local politics. Oliver Streiter reminds us that the Xindian First Public Cemetery is a 'most comprehensive and most accessible cultural heritage site, which documents history, migration, culture, politics, and languages through artistic means in harmony with local material, tradition and landscape.' Notably, Streiter directs the Thakbong Project for which he digitally archives and maps the heritage of cemeteries. As for Taiwan, he states that, 'When brought into relation with the larger set of gravesites in Penghu, Jinmen, Fujian, Japan and Southeast Asia, these gravesites reflect the role that Taiwan has played in Asia throughout the last 400 years' (Morris 2018a). In terms of Xindian, at the edge of the Qing dynasty's eastern frontier, James Morris reminds us that 'tombstones may be the earliest evidence of written words in a community.' He points to a gravestone dating to 1792 soon after the district's settlement by people coming from China. This artefact was destroyed along with the other gravestones of the cemetery (Photo 12).

There have been positive actions taken by the island's people. Briefly to give a few examples (as Taiwan is home to many non-governmental organizations (NGOs) that provide education in ecology and heritage). One example is the Hualien-based Kuroshio Ocean Education Foundation that seeks to encourage a better understanding of the ocean and currents surrounding Taiwan to facilitate active care of the marine environment and its related cultures.

In terms of environmental activism, in Taitung the indigenous Amis community at Dulan has protested the construction of the Miramar Resort on the beach where they practiced their sea craft launching rituals. The protest campaign stopped the resort from opening (Demirtas 2013). Such community mobilization offers hope for the conservation of the environment and culture in terms of offsetting monetary interests.

Since the 1990s, Taiwanese have been coming of age to recognize their mosaic of ethnic cultures, yet they are separate as groups with their own lineages, tastes, languages, and determinates of what is important. Plural societies talk of the importance of unity in maintaining harmony, yet there are deep structural differences. In Taiwan there is a common expression that roughly translates as: 'let us agree to disagree.'

It is difficult to unify an island of diverse peoples for heritage and environmental





**Photo 12** Qing dynasty gravestone 1792, Xindian First Public Cemetery (ThakBong archives, 2017).

conservation. It is yet to be seen how the Taiwanese will deal with maintaining their many cultural inheritances for future generations. In some places we observe a lack of regard for the local ecological future, while in others we observe the synthesis of heritage knowledge and technology. It is in the latter approach that we observe sustainable lessons: smart uses of mobile advanced devices combined with a deep sense of respect for ancestors, *fengshui*, and a sense of communing with natural and diverse localities give hope for sustaining heritage for Taiwan and the region.

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